

REMARKS

Reconsideration of the Final Office Action dated February 3, 2006 is respectfully requested.

Initially, the Office Action notes that a copy of the Tsukune reference is missing from the application file. However, this reference was submitted to the Patent Office together with an Information Disclosure Statement on November 22, 2005.

Enclosed herewith is a copy of the Patent Office-stamped postcard indicating that each of the references AA-AI (including the Tsukune reference, AH) was received by the Patent Office on November 22, 2005. For the Examiner's convenience, another copy of the Tsukune reference and the form PTO-1449 are attached. Applicants respectfully request that the Examiner consider the Tsukune reference and indicate such consideration by returning an Examiner-initialed copy of the attached form PTO-1449.

The rejection of claims 1-9 under 35 U.S.C. §102(a) over Applicants' alleged admitted prior art, and the rejection of claims 10 and 20 under 35 U.S.C. § 103(a) over Applicants' alleged admitted prior art in view of arguments proffered by the examiner are respectfully traversed.¹ Reconsideration and withdrawal of these rejections are respectfully requested.

¹ The rejection under § 102 refers only to claims 1-9. However, in view of the detailed reasons for the rejection, it is believed that rejection under § 102 was intended to be directed to claims 1-9 and 11-19.

Applicants' invention relates generally to the technology of hydrogen sintering and specifically to the use of plasma-induced hydrogen sintering in semiconductor device fabrication.

Claim 1, in pertinent part, recites a substrate processing method comprising forming an atmosphere comprising hydrogen radicals and hydrogen ions by exciting a processing gas including a noble gas and hydrogen into a plasma. Independent claim 11 recites exposing an electronic device substrate to an atmosphere containing hydrogen radicals and hydrogen ions formed by exciting a gas containing a noble gas and a hydrogen gas by plasma. Applicants have discovered that by using a low electron temperature (i.e., low energy) plasma, a hydrogen sintering process can be performed in a plasma environment without damaging the semiconductor device.

The Office Action alleges that the subject matter of claim 1 is recited in Applicants' admitted prior art on page 5, lines 27-33 of the specification as originally filed. Applicants disagree.

Referring specifically to page 5, lines 27-33, it is clear that the disclosure relates to the technology of direct oxidation or direct nitridation of a silicon substrate using a noble gas of, for example, He, Ne, Ar, Kr and Xe, with a gas including oxygen or nitrogen. Pointedly, the disclosure at page 5, lines 27-33 does not disclose forming a plasma using hydrogen, much less a substrate processing method comprising exciting a noble gas and hydrogen into plasma.

Because each and every element of the claimed invention is not disclosed, the rejection under 35 U.S.C. §102 is improper and should be withdrawn.

In support of the arguments above, Applicants will submit a Declaration under 37 C.F.R. §1.132 signed by each of the inventors in a supplemental response.

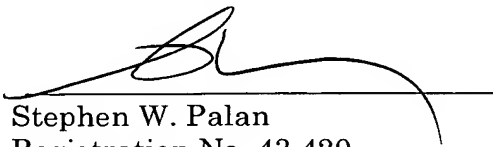
In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned at (202) 624-2710 would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #010986.55104US).

Respectfully submitted,

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